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10/815,985	04/01/2004	Michael O. Rabin	2645.2003-000	7288

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EXAMINER

AVERY, JEREMIAH L

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2131

DATE MAILED: 09/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/815,985	Applicant(s) RABIN ET AL.	
	Examiner Jeremiah Avery	Art Unit 2131	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04/01/04.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-50 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-50 is/are rejected.
- 7) ☒ Claim(s) 18 and 50 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 November 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>090905</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-50 have been examined.

Information Disclosure Statement

1. United States Patent No. 5,892,900 to Ginter et al. was listed twice on the Information Disclosure Statement and thus was only considered once.

Specification

2. The disclosure is objected to because of the following informalities: grammatical error on page 9, line 18, "the superfingerprint may be consist of the set". Appropriate correction is required.

Claim Objections

3. Claim 18 is objected to because of the following informalities: typo in line 1. The claim has "a" instead of "an" preceding "audio". Appropriate correction is required.
4. Claim 50 is objected to because of the following informalities: colon missing on line 2. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-50 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,170,060 to Mott et al., hereinafter Mott.

5. Regarding claim 1, Mott teaches a method for creating a superfingerprint for identifying a software comprising:

executing said software at least once (column 3, lines 16-22 and column 4, lines 22-28);

in each execution, selecting specified portions of at least one of said executing software and of results of executing said software (column 6, lines 63-66, column 10, lines 62-67, column 11, lines 1-11 and column 15, lines 2-7, 26-39);

in each execution, performing computations on said selected portions to obtain a collection of fingerprints (column 11, lines 33-46, column 12, lines 19-59, column 13, lines 12-14, 39-41 and column 14, lines 25-49);

combining said collections of fingerprints found in each execution into the superfingerprint of said software according to a combining rule (column 11, lines 33-46, column 12, lines 19-59, column 13, lines 12-41 and column 14, lines 25-34).

6. Regarding claim 2, Mott teaches wherein the software is executed a plurality of times and the collection of fingerprints obtained during each execution are combined together according to the combining rule (column 11, lines 2-11 and column 13, lines 12-14, 54-59).

7. Regarding claim 3, Mott teaches wherein the combining rule outputs only those fingerprints that are computed in more than a specified number of executions (column 12, lines 57-67 and column 13, lines 1-22).

[Mott states that "the private group ID is never sent through any communications link or network path, except during installation." This would be the specific execution (the installation process). Mott further states that in another embodiment the "group assignment process" could "take place sometime after group assignments have been downloaded to client system." Thus the process is being performed after the initial installation process.]

8. Regarding claim 4, Mott teaches wherein the combining rule removes from the output those fingerprints that occur in more than a specified number of executions of specified other softwares (column 10, lines 53-58, 61-67, column 11, lines 1-6, 19-25 and column 16, lines 7-16).

[Mott states that the downloading can occur "multiple times after an initial purchase". Such data that is downloaded can be "digital information files, software updates and configuration changes", which can be done separately.]

9. Regarding claim 5, Mott teaches wherein fingerprints are not removed if they belong to a same group of software as said software (column 15, lines 60-67).

10. Regarding claim 6, Mott teaches wherein a fingerprint belongs to the superfingerprints of several softwares (column 10, lines 62-67, column 11, lines 1-11, 33-46, 50-53, column 13, lines 7-11 and column 14, lines 24-40).

[The library server is capable of holding the data (including IDs) of several client browsers. By providing its private key, the library server is providing a unique identifier to the digital signature that will allow each specific

browser access (if the verification sequence is correct) to software that is preferred to their particular system; not software indicative of other client browsers.]

11. Regarding claim 7, Mott teaches storing in at least one data structure at least one fingerprint and means to identify said several softwares in whose superfingerprint said fingerprint is included (column 11, lines 60-67, column 12, lines 1-11 and column 14, lines 25-40, "library server").

12. Regarding claim 8, Mott teaches wherein the means to identify is a bit vector data structure whose mth bit indicates whether the superfingerprint associated with the mth member of said several softwares includes said fingerprint (column 11, lines 60-67 and column 12, lines 1-11).

13. Regarding claim 9, Mott teaches wherein associated with each said fingerprint there are at least two numbers k_1 and k_2 where k_2 is greater than or equal to k_1 that indicate that the fingerprints of softwares from k_1 to k_2 of said several softwares all include said fingerprint (Figure 12, column 11, lines 60-67, column 12, lines 1-11, 26, 27, 34-47, 61-64 and column 19, lines 24-29). [If ID "matches" then that means there is an equality present.]

14. Regarding claim 10, Mott teaches wherein said several softwares belong to a group of software (column 10, line 44-53 and column 11, lines 13-19).

15. Regarding claim 11, Mott teaches wherein the fingerprints of various softwares are stored in a data structure to facilitate and accelerate retrieval of fingerprints and associated names of software (column 5, lines 32-35, 40-64, column 6, lines 63-66,

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column 7, lines 2-4 and column 8, lines 42-56). [The digital library can be considered to be said "data structure".]

16. Regarding claim 12, Mott teaches wherein the executing software is partitioned into pages, said specified portions are selected from said pages and the computations produce a fingerprint for each portion (column 7, lines 44-64 and column 8, lines 6-9).

17. Regarding claim 13, Mott teaches wherein said specified portions are selected from the software stored in a memory of the device executing said software (column 10, lines 12-16, 22-24, 35-58).

18. Regarding claim 14, Mott teaches wherein said specified portions are selected from the software stored in secondary memory of the device executing said software (column 10, lines 35-39, 41-53). [The device that Mott mentions contains multiple forms of memory.]

19. Regarding claim 15, Mott teaches wherein the specified portions are basic blocks of programs (column 7, lines 44-64, column 13, lines 39-53 and column 14, lines 25-34).

20. Regarding claim 16, Mott teaches wherein the computation involves only parts of said selected portions (column 13, lines 12-39, 44-53). [The "mathematical function" that Mott refers to can pertain to primarily the IDs of specific or "targeted" playback device(s).]

21. Regarding claim 17, Mott teaches wherein said involved parts are operation codes (column 8, lines 42-47, 59-67, column 9, lines 28-33, 46-49, column 10, lines 37-39, 44-47 and column 12, lines 19-23).

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22. Regarding claim 18, Mott teaches wherein said involved parts are information in an audio signal (column 3, lines 60-66, column 4, lines 4-8, 64-67, column 5, lines 32-35, 40-46, column 6, lines 37-67, column 7, lines 1-4, column 10, lines 30-33 and column 15, lines 34-39).

23. Regarding claim 19, Mott teaches wherein said involved parts are information in a visual display (column 3, lines 30-34, column 5, lines 60-64, column 10, lines 33-35 and column 15, lines 34-39).

24. Regarding claim 20, Mott teaches wherein the selected portion concerns the interaction between at least one user and the execution of software (column 15, lines 26-39, "preview", "selected", "played").

25. Regarding claim 21, Mott teaches wherein the output to the computation is a sequence (column 11, lines 50-53, 60-67 and column 12, line 1).

26. Regarding claim 22, Mott teaches wherein the computation is a hash function value of said portion (column 18, lines 55-67 and column 19, lines 1-11, 26-30).

27. Regarding claim 23, Mott teaches wherein the hash function value is computed by polynomial fingerprinting (column 13, lines 41-44 and column 15, lines 15, 16, 50-53).

[It is understood by those skilled in the art that a cyclic redundancy check (CRC) is a type of hash function that can create a checksum. Sets of polynomials are used when conducting computations for CRCs.]

28. Regarding claim 24, Mott teaches wherein the computation is a computation on an audio signal (column 6, lines 46-58 and column 18, lines 23-36, 61-65).

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29. Regarding claim 25, Mott teaches wherein the computation is a computation on a video stream (column 5, lines 60-64 and column 18, lines 23-36, 61-65).

30. Regarding claim 26, Mott teaches a method for identifying a first software comprising the steps of:

storing previously created superfingerprints for at least one software (column 11, lines 60-67, column 12, lines 1-11 and column 14, lines 25-40, "library server");

executing said first software at least once (column 3, lines 16-22 and column 4, lines 22-28);

selecting specified portions of at least one of said executing software and of the results of executing said software on each execution (column 6, lines 63-66, column 10, lines 62-67, column 11, lines 1-11 and column 15, lines 2-7, 26-39);

performing specified computations on said selected portions to obtain a collection of fingerprints (column 11, lines 33-46, column 12, lines 19-59, column 13, lines 12-14, 39-41 and column 14, lines 25-49);

comparing said collection of fingerprints to said previously computed superfingerprint of at least one second software to determine whether there is an approximate match (column 2, lines 12-19, column 12, lines 34-38, column 18, lines 23-36 and column 19, lines 18-36);

declaring said first software to be the same as said second software if an approximate match is found (column 2, lines 12-19, column 18, lines 23-

36 and column 19, lines 18-36). [The “playing” of the file indicates that a match has been found.]

31. Regarding claim 27, Mott teaches wherein said specified portions of said executing software and of said results of executing said software, are stored in a memory of a device executing said software (column 10, lines 12-16, 22-24, 35-58). [The device that Mott mentions contains multiple forms of memory.]

32. Regarding claim 28, Mott teaches wherein said specified portions of at least one of said executing software and of said results of executing said software, are selected from recently accessed portions of the software stored in the memory of the device executing said software (column 6, lines 13-16, 41-43, 63-67, column 7, lines 1-23, 56-62, column 8, lines 1-34, 57-67).

[The “preview clips” that Mott discloses, which contain portions of data, are accessed prior to the accessing of the entire digital information file.]

33. Regarding claim 29, Mott teaches wherein said specified components of said executing software are selected from portions of said executing software stored in secondary storage (column 10, lines 35-39, 41-53). [The device that Mott mentions contains multiple forms of memory.]

34. Regarding claim 30, Mott teaches wherein the portions of said executing software are selected while said software is sent from one device to another (column 4, lines 4-8, column 6, lines 37-41, 55-60, column 7, lines 5-7, column 8, lines 13-16, 24-34, column 10, lines 27-33, 41-44 and column 11, lines 33-46).

[While the selected data is being sent, the identifiers incorporated in the transmission verify whether or not the destination (client computer system) has proper authorization to use said data.]

35. Regarding claim 31, Mott teaches wherein said portions of the results of execution of said software are selected from the output of the device executing said software (column 6, lines 34 and 35, column 9, lines 42-45, 58-61, column 10, lines 27-30, 33-35 and column 15, lines 34-39).

36. Regarding claim 32, Mott teaches wherein said specified portions of at least one of said executing software and of the results of executing said software on a later execution are dependent on the results of an earlier approximate match (column 8, lines 9-16, 24-34, column 11, lines 8-25, 37-42 and column 17, lines 21-25).

[Conducting an update would indicate that the software was initially able to be downloaded. There is already a trust between the client system and the library server, thus enabling a check of the system and, if necessary, to download any updated material to said system.]

37. Regarding claim 33, Mott teaches wherein determining the approximate match comprises: determining whether the amount of said commonality between fingerprints of said first software and the fingerprints comprising said superfingerprint of said at least one second software exceeds a specified threshold in which case the first software is identified to be the same as the second software (column 11, lines 8-25, 37-42 and column 17, lines 21-25).

[The “threshold” can be an indicator as to whether or not a current version of the software is on the client system (version number, different modification dates, etc.). After comparing the software on said client system with another source such as the library server, if the “threshold” has been exceeded (obsolete version detected, software on server has a later modification date, etc.), then the appropriate action is taken (such as downloading the update).]

38. Regarding claim 34, Mott teaches wherein said specified threshold is exceeded only if the amount of commonality between said fingerprints of said first software and the fingerprints comprising said superfingerprint of said second software exceed the commonality between said fingerprints of said first software and the fingerprints comprising the superfingerprint of a third software (column 11, lines 2-25, 37-42 and column 17, lines 21-25).

[Mott states that the downloading can occur “multiple times after an initial purchase”. It can be interpreted that the first software is the “initial purchase”, the second software can be the first update and the third software can possibly be a subsequent update.]

39. Regarding claim 35, Mott teaches wherein the commonality between the fingerprints of said first software and said second software depends on the number of fingerprints that are the same in said two softwares with a weighting factor for each equal fingerprint (column column 18, lines 55-67 and column 19, lines 1-36).

40. Regarding claim 36, Mott teaches wherein commonality further depends on the number of fingerprints that are different in said two softwares with a weighting factor for each unequal fingerprint (column 9, lines 14-39, column 10, lines 8-16, 35-45, column 11, lines 50-67, column 12, lines 1-11).

[Mott discloses that there is "unique verification sequence" for each server, system and device. Though the sequences are each "unique" from one another, they work in unison to conduct the necessary authorization procedure(s).]

41. Regarding claim 37, Mott teaches wherein commonality further depends on the relative positions of the portions of Software from which at least two fingerprints are computed (Figures 2 and 7, column 16, lines 29-57).

42. Regarding claim 38, Mott teaches wherein the specified computation involves only parts of said selected portions (column 13, lines 12-39, 44-53). [The "mathematical function" that Mott refers to can pertain to primarily the IDs of specific or "targeted" playback device(s).]

43. Regarding claim 39, Mott teaches wherein said involved parts are operation codes (column 8, lines 42-47, 59-67, column 9, lines 28-33, 46-49, column 10, lines 37-39, 44-47 and column 12, lines 19-23).

44. Regarding claim 40, Mott teaches wherein said involved parts are information in an audio signal (column 3, lines 60-66, column 4, lines 4-8, 64-67, column 5, lines 32-35, 40-46, column 6, lines 37-67, column 7, lines 1-4, column 10, lines 30-33 and column 15, lines 34-39).

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45. Regarding claim 41, Mott teaches wherein said involved parts are information in a visual display (column 3, lines 30-34, column 5, lines 60-64, column 10, lines 33-35 and column 15, lines 34-39).

46. Regarding claim 42, Mott teaches wherein the selected portion concerns the interaction between at least one user and the execution of software (column 15, lines 26-39, "preview", "selected", "played").

47. Regarding claim 43, Mott teaches wherein the input to the computation is a sequence (column 11, lines 50-53, 60-67 and column 12, line 1).

48. Regarding claim 44, Mott teaches wherein the input to the comparison is a collection of fingerprints each having an associated weight (column column 18, lines 55-67 and column 19, lines 1-36).

49. Regarding claim 45, Mott teaches wherein the computation is a hash function value of said portion (column 18, lines 55-67 and column 19, lines 1-11, 26-30).

50. Regarding claim 46, Mott teaches wherein the hash function value is computed by polynomial fingerprinting (column 13, lines 41-44 and column 15, lines 15, 16, 50-53).

[It is understood by those skilled in the art that a cyclic redundancy check (CRC) is a type of hash function that can create a checksum. Sets of polynomials are used when conducting computations for CRCs.]

51. Regarding claim 47, Mott teaches wherein the computation is a computation of an audio signal (column 6, lines 46-58 and column 18, lines 23-36, 61-65).

52. Regarding claim 48, Mott teaches wherein the computation is a computation of a video stream (column 5, lines 60-64 and column 18, lines 23-36, 61-65).

53. Regarding claim 49, Mott teaches a method for identifying a software group of a first software comprising the steps of:

storing previously created superfingerprints for at least one software group (column 11, lines 60-67, column 12, lines 1-11 and column 14, lines 25-40, "library server");

executing said first software at least once (column 3, lines 16-22 and column 4, lines 22-28);

selecting specified portions of said executing first software and of the results of executing said first software on each execution (column 6, lines 63-66, column 10, lines 62-67, column 11, lines 1-11 and column 15, lines 2-7, 26-39);

performing specified computations on said selected portions to obtain a collection of fingerprints (column 11, lines 33-46, column 12, lines 19-59, column 13, lines 12-14, 39-41 and column 14, lines 25-49);

comparing said collection of fingerprints to said previously computed superfingerprint of at least one second software group to determine whether there is an approximate match (column 2, lines 12-19, column 12, lines 34-38, column 18, lines 23-36 and column 19, lines 18-36);

declaring said first software to be a member of said second software group if an approximate match is found (column 2, lines 12-19, column 18,

lines 23-36 and column 19, lines 18-36). [The “playing” of the file indicates that a match has been found.]

54. Regarding claim 50, Mott teaches a method for identifying a software that is a member of a group of software comprising the steps of:

storing previously created superfingerprints for at least one software group and for members of that group (column 11, lines 60-67, column 12, lines 1-11 and column 14, lines 25-40, “library server”);

executing said software at least once (column 3, lines 16-22 and column 4, lines 22-28);

selecting specified portions of said executing software and of the results of executing said software on each execution (column 6, lines 63-66, column 10, lines 62-67, column 11, lines 1-11 and column 15, lines 2-7, 26-39);

performing computations on said selected portions to obtain a collection of fingerprints (column 11, lines 33-46, column 12, lines 19-59, column 13, lines 12-14, 39-41 and column 14, lines 25-49);

comparing said collection of fingerprints to said previously computed superfingerprint of at least one second software group and the

superfingerprints of the members of said second software group to

determine whether there is an approximate match with said group and at least one of said superfingerprints of said members of said group (column

2, lines 12-19, column 12, lines 34-38, column 18, lines 23-36 and column 19, lines 18-36);

declaring said software to be the same as a particular member of said second software group if an approximate match is found (column 2, lines 12-19, column 18, lines 23-36 and column 19, lines 18-36). [The "playing" of the file indicates that a match has been found.]

Conclusion

55. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

56. The following patents are cited to further show the state of the art with respect to detecting and identifying software, such as:

U.S. Patent No. 5,646,997 to Barton, which is cited to show embedding authentication information into data blocks and creating digital signatures.

U.S. Patent No. 5,926,624 to Katz et al., which is cited to show the authentication and transferring of secure data from a library system to a client system and mobile playback device.

U.S. Patent No. 5,933,498 to Schneck et al., which is cited to show a method and device for controlling access to data.

U.S. Patent No. 6,165,072 to Davis et al., which is cited to show verification of data transactions over a network.

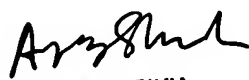
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57. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremiah Avery whose telephone number is (571) 272-8627. The examiner can normally be reached on Monday thru Friday 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on (571) 272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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